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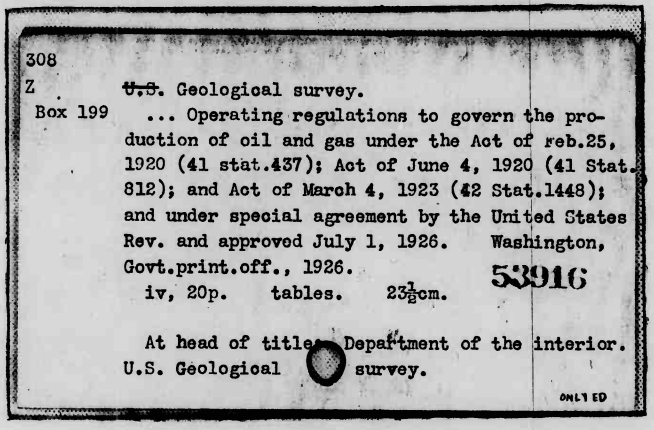

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DEPARTMENT OF THE INTERIOR

U. S. GEOLOGICAL SURVEY

# OPERATING REGULATIONS

TO GOVERN THE

# PRODUCTION OF OIL AND GAS

Under the Act of February 25, 1920 (41 Stat. 437); Act of June 4, 1920 (41 Stat. 812); and Act of March 4, 1923 (42 Stat. 1448); and under special agreement by the United States

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Revised and Approved July 1, 1926

WASHINGTON
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# OPERATING REGULATIONS TO GOVERN THE PRODUCTION OF OIL AND GAS UNDER THE ACT OF FEBRUARY 25, 1920; THE ACT OF JUNE 4, 1920; THE ACT OF MARCH 4, 1923; AND UNDER SPECIAL AGREEMENT BY THE UNITED STATES

## INTRODUCTION

### DEFINITIONS

The following terms as used in these regulations shall have the meanings here given:

*Supervisor.*—An agent appointed by and with the power to act for the Secretary of the Interior under the direction of the Director of the United States Geological Survey, in supervising all operations under these regulations within the district to which he is assigned.

*Representative, local representative*—Any employee of the Department of the Interior who is designated by a supervisor to act for him in any specified part or all of the supervisor's district.

*Lessee.*—Any holder of an oil and gas prospecting permit or lease issued under the general leasing act of February 25, 1920 (41 Stat. 437), the naval appropriation act of June 4, 1920 (41 Stat. 812, 813), or the act of March 4, 1923 (42 Stat. 1448), or under special agreement by the United States.

*Permittee.*—The holder of an oil and gas prospecting permit and a potential if not actual lessee who is regarded as such and is subject to the provisions of these regulations in so far as they are applicable to his operations.

*Leased lands, leased premises, leased tract.*—Any lands or deposits occupied under permit or lease granted to a lessee.

### WITH WHOM TO DEAL

In matters pertaining to drilling and producing operations and to the handling and gauging of oil or gas the lessee should deal with the supervisor or his representative in the district where the land under permit or lease is located. Should the lessee not know with whom to deal, he should inquire by letter to the Director, Geological Survey, Washington, D. C.

### PURPOSE OF SUPERVISION

The supervisor and his representatives will require that lessees comply with these regulations and operate their properties in a manner in keeping with the best practice for the locality.

Inasmuch as any specific and binding regulations drawn for one field or even most fields may not be applicable to certain other fields, the following regulations are purposely broad in scope, the details of interpretation being

left to the supervisor. Where they are adaptable, the suggestions for efficient operating discussed in Manual for Oil and Gas Operations (Bureau of Mines Bulletin 232) will form the basis of the department's policy and requirements.

## SECTION 1. POWERS AND DUTIES OF SUPERVISOR

It shall be the duty of the supervisor directly or through his representatives—

(*a*) To visit from time to time leased lands where operations for the discovery or production of oil and gas are conducted, to inspect and supervise such operations with a view to preventing waste of oil and gas, damage to formations or deposits containing oil, gas, or water or to coal measures or other mineral deposits, injury to life or property, or economic waste; and to issue, in accordance with the provisions of the lease and these regulations, such necessary instructions to lessees as will effectively prevent such waste or damage.

(*b*) To make reports to the Director of the Geological Survey as to the general condition of the leased property and the manner in which operations are being conducted and the departmental orders are being obeyed, and to submit from time to time information and recommendations for safeguarding and protecting the surface property and the underlying mineral-bearing formations.

(*c*) To prescribe the manner and form in which all records of operations, reports, and notices shall be made by lessees.

(*d*) To require that tests shall be made to detect wastes of oil and gas, as well as the presence of oil, gas, or water in a well, and to prescribe or approve the methods of making such tests.

(*e*) To require the correction, in a manner to be prescribed or approved by him, of any condition existing subsequent to the completion of a well which is causing or is likely to cause damage to any formation bearing oil, gas, or water or to coal measures or other mineral deposits or which is dangerous to life or property or wasteful of oil or gas.

(*f*) To determine the percentage of the potential capacity of any gas well which may be utilized when, in his opinion, such action is necessary to protect the gas-producing formations. He shall likewise specify the time and method for determining the potential capacity of gas wells.

(*g*) To assist and advise lessees making tests and carrying on experiments for the purpose of increasing the efficiency of operation.

(*h*) To compile records of production of oil, gas, and natural-gas gasoline and to compute and report the amount and value of accrued royalties.

(*i*) To sign division orders granting pipe-line companies authority to receive oil or gas from leased lands in accordance with Government rules and regulations; to sign run tickets or receipts of other forms for royalty oil delivered to an agent of the United States or to the Government account.

(*j*) On receipt of application for relief from any drilling or producing requirement under a lease, (1) to forward such application, together with his report and recommendation thereon, to the Director of the Geological Survey, and, pending action by the Secretary, to grant such temporary relief as he may deem warranted in the premises, or (2) to reject such application subject to the right of appeal as provided in section 6 hereof.

(*k*) To require, by written notice, immediate suspension of any operation or practice contrary to the requirements of these regulations or to the written orders of the supervisor or his representative until the lessee shall have complied with such requirements or orders.



(*l*) To receive and transmit promptly to the Director of the Geological Survey, for review by the Secretary of the Interior, all appeals from his written orders, together with his report in the premises. (See sec. 6.)

## SECTION 2. REQUIREMENTS FOR LESSEES (INCLUDING PERMITTEES)

(*a*) The lessee shall conform to the terms of the lease or permit and regulations and to the written instructions of the supervisor or his representatives and shall take precautions to prevent waste of oil or gas, damage to formations or deposits bearing oil, gas, or water or to coal measures or other mineral deposits, injury to life or property, or economic waste.

(*b*) The lessee shall designate in writing the name and post-office address of a local or resident representative for each permit or lease, on whom the supervisor or other authorized representative of the Department of the Interior may serve notice or with whom he may otherwise communicate in securing compliance with these regulations. The resident representative of the lessee shall be designated before drilling or other operations are begun.

If said designated local or resident representative shall at any time be incapacitated for duty or absent from his designated address, the lessee shall designate in writing a substitute to serve in his stead, and in the absence of such representative or of written notice of the appointment of a substitute, any employee of the lessee who is on the leased premises or the contractor or other person in charge of operations shall be considered the representative of the lessee for the service of written orders or notices as herein provided, and service in person or by ordinary mail upon any such employee, contractor, or other person shall be deemed service upon the lessee. All changes of address of the designated representative shall be immediately reported, in writing, to the supervisor or his local representative.

(*c*) The lessee shall not drill any well within 200 feet of any of the outer boundaries of the land covered by a permit or lease except as may be necessary to protect himself against offset wells on lands the title to which is not held by the United States of America, and then only on consent first had in writing from the supervisor or his representative.

(*d*) The lessee shall not begin to drill, redrill, make water-shut-off or formation test, deepen, shoot, plug, or abandon any well, or alter the casing in it without first notifying the supervisor or his representative of his plan or intention and receiving approval prior to commencing the contemplated work.

(*e*) The lessee shall permanently mark all rigs or wells in a conspicuous place with his name or the name of the actual operator and the number or designation of the well, and shall take all necessary means and precautions to preserve these markings. Abandoned wells shall be marked with a permanent monument which shall consist of a piece of pipe not less than 4 inches in diameter and not less than 10 feet in length, of which 4 feet shall be above the ground level, the remainder being embedded in cement. This pipe shall be capped with a screw cap.

(*f*) The lessee shall keep on the leased premises or at his headquarters in the field accurate records of the drilling, redrilling, deepening, plugging, or abandoning of all wells and of all alterations to casing, the records to show all the formations penetrated, the content of oil, gas, or water (and if water, its character) in each formation, and the kinds, weights, landed depths, and sizes of casings used in drilling the wells. He shall furnish such characteristic samples of each formation penetrated as may be requested by the supervisor or his representative. Within 15 days after the completion of any well and

within 15 days after the completion of any further operations on it the lessee shall transmit to the supervisor or his local representative copies of these records on prescribed forms (see sec. 5 of these regulations) furnished by the supervisor. The lessee shall also submit such other reports and records of operations as may be required in the manner and form prescribed by the supervisor. (See sec. 5.)

(*g*) In drilling in "wildcat" territory or in a gas or oil field where high pressures are likely to exist the lessee shall take all proper precautions necessary for bringing the well under control at any time and shall provide at the time the well is started the proper high-pressure fittings and equipment required for such work. Good practice under such conditions requires that the conductor string of casing be cemented around the casing shoe.

(*h*) When drilling with cable tools, the lessee shall provide at least one properly prepared slush pit, into which he must deposit mud and cuttings from clay or shale free of sand that will be suitable for the mudding of a well, except when he is drilling in a proved area where it is known that such precautions are unnecessary. When required, a second pit must be provided for sand pumpings and other material extracted from the well during the process of drilling that are not suitable for mudding.

(*i*) When drilling with rotary tools, the lessee shall provide when required by the supervisor or his representative an auxiliary mud pit of suitable capacity in which he can maintain a supply of extra heavy mud for emergency use in case of blow-outs or lost circulation. When required, surplus mud and cuttings shall be confined in suitable pits.

(*j*) The lessee, by methods approved by the supervisor or his local representative, shall effectually shut off and exclude all water from any oil or gas bearing stratum and shall make a casing and water shut-off test before suspending drilling operations or completing the well and drilling into the oil or gas sand.

The lessee shall also effectually test for commercial productivity all formations that give evidence of carrying oil or gas, the test to be made in a manner approved in advance by the supervisor or his local representative. Unless otherwise specifically approved by the supervisor or his representative, formation tests shall be made at the time the formations are penetrated and in the absence of excessive back pressure from a column of water or mud fluid.

(*k*) The lessee shall not deepen an oil or gas well for the purpose of producing oil or gas from a deeper stratum unless the upper productive strata are properly protected.

(*l*) The lessee shall prevent any oil or gas well from blowing open and shall take immediate steps and exercise due dilligence to bring under control any "wild" or burning oil or gas well or water well.

(*m*) The lessee shall operate his wells in such manner as to eliminate, so far as possible, the formation of emulsion, or so-called B. S. If the formation of emulsion, or B. S., can not be avoided and the oil can not be recovered from the emulsion by usual methods of treatment, the lessee shall treat the oil to put it into a marketable condition if it can be recovered at a profit. The supervisor is empowered to authorize a deduction, before the royalty is computed, on account of the cost of putting the oil into marketable condition by such unusual methods, in order to encourage the conservation of oil and oil products. To avoid excessive losses from evaporation or "burning the oil," the lessee shall not heat emulsified oil for the purpose of breaking down emulsions to temperatures above the minimum temperature required to put the oil into marketable condition.



(*n*) B. S. and salt water from tanks or wells shall not be allowed to pollute streams or damage the surface of adjoining land. If the B. S. can not be treated or burned and the volume of salt water is too great for disposal by seepage and evaporation, the lessee should consult the supervisor or his representative regarding its disposal and dispose of it under some approved method.

(*o*) All oil run from leased lands shall be gauged according to methods approved by the supervisor or his representative. The lessee shall provide tanks suitable for containing and accurately measuring the crude oil produced from the wells and shall furnish to the supervisor or his representative at least two acceptable copies of all tank tables. The lessee shall not, except during an emergency and except by special permission of the supervisor or his representative, confirmed in writing, permit oil to be stored or retained in earthen reservoirs or in any other receptacles in which there may be undue waste of oil by seepage or evaporation.

(*p*) Before abandoning a well the lessee shall submit to the supervisor or his representative a statement of reasons for abandonment and his detailed plans for carrying on the work, together with duplicate copies of the log in case it has not already been submitted, and shall proceed with the abandonment only on receiving the written approval of the supervisor or his representative and in the manner prescribed by such official. No producing oil or gas well shall be abandoned unless it is demonstrated that further operation is commercially unprofitable.

(*q*) The lessee shall prevent the waste of natural gas or its wasteful utilization. The use of gas in its natural state in engines, pumps, or similar equipment where its pressure is the direct operating force is prohibited unless the exhaust gas is conserved for use as fuel or unless special permission is obtained from the supervisor or his representative.

(*r*) The lessee shall exercise reasonable precaution in providing against accidents and fires and shall make a full report to the supervisor of all accidents or fires on the leased premises.

(*s*) The lessee shall file with the Secretary of the Interior, through the supervisor or his representative, triplicate signed copies of contracts for the disposition of oil, natural gas, and natural-gas gasoline produced, except that portion used for production purposes on the land leased, and in the event that the United States shall elect to take its royalties in money instead of in oil or gas or gasoline, he shall not sell or otherwise dispose of the products of the land leased except in accordance with the sales contract or other method first approved by the Secretary of the Interior.

(*t*) The lessee desiring relief from any drilling or producing requirement under a lease shall file, in duplicate, with the supervisor or his representative an application therefor, including a full statement of the circumstances that in his opinion render relief necessary or desirable.

(*u*) The lessee must immediately obey all orders intended to carry out the terms and spirit of these regulations, whether they are issued directly by the supervisor or through his representative. Subjects of controversy may be settled in conference between the lessee and the supervisor or his representative, but the supervisor or his representative shall have final authority subject to the right of appeal as provided in section 6 hereof.

## SECTION 3. OIL ROYALTIES

(*a*) Royalties payable in value shall be paid to the Register of the United States Land Office for the district in which the leased land is situated. Royalties shall be due and payable on or before the 15th of each calendar month for all oil produced during the preceding calendar month.

If the Government elects to take its royalties in kind, the lessee shall furnish storage for such royalty oil free of charge for 30 days after the end of the calendar month in which the oil is produced. The oil is to be stored on the leased premises or at such place as the supervisor or his representative and the lessee may mutually agree upon.

(*b*) The sliding-scale royalties are based on the average daily production per well. Ordinarily the average daily production per well for a lease is computed on the basis of a 28, 29, 30, or 31 day month (as the case may be) and the number of wells on the lease counted as producing. (Tables for computing royalty on the sliding-scale basis may be obtained upon application to the supervisor or his representative.) The supervisor will determine the number of producing wells for computing royalties in accordance with the following cases:

CASE I. On a previously producing leasehold, count as producing wells for every day of the month each previously producing well that produced for 15 days or more during the month and disregard those that produced for less than 15 days during the month.

CASE II. When the initial production of a leasehold is made during the calendar month, compute royalty on the basis of producing well days.

CASE III. When a new well or wells are brought in on a previously producing leasehold and produce for 10 days or more during the calendar month in which they are brought in, count such new well or wells as producing every day of the month, in arriving at the number of producing well days. Do not count new well or wells that produce for less than 10 days during the calendar month.

CASE IV. Consider "head wells" that make their best production by intermittent pumping or flowing as producing every day of the month, provided they are regularly operated in this manner.

CASE V. On a previously producing lease where no old well or wells produced for 15 days or more, compute royalty on a basis of actual producing well days.

CASE VI. On a previously producing lease where no wells were producing during the calendar month, but oil was shipped during the month, compute the royalty at the same royalty percentage as that of the last preceding calendar month in which production and shipments were normal.

Special cases not subject to definition, such as those arising from averaging the production from two distinct sands or horizons when the production of one sand or horizon is relatively insignificant as compared to that of the other, shall be submitted to the supervisor.

In the following summary of operations on a typical leasehold for the month of June, the wells considered in computing royalty on the entire production of the property for the month are indicated:

| Well No. | Record | Count (marked X) |
|---|---|---|
| 1 | Produced full time for 30 days | X |
| 2 | Produced for 26 days; down 4 days for repairs | X |
| 3 | Produced for 28 days; down June 5, 12 hours, rods; June 14, 6 hours, engine down; June 25, 24 hours, June 26, 24 hours, pulling rods and tubing | X |
| 4 | Produced for 12 days; down June 13 to 30 | |
| 5 | Produced for 8 hours every other day (head well) | X |
| 6 | Idle producer (not operated) | |
| 7 | New well, completed June 17; produced for 14 days | X |



In this case there are seven wells on the leasehold, but wells No. 4 and No. 6 are not counted in computing royalties. Wells Nos. 1, 2, 3, 5, and 7 are counted as producing for 30 days. The royalty is taken on the total production of the leasehold for the month (including the oil produced by well No. 4).

Government leases stipulate that the royalty shall be paid on the basis of the actual production from the area leased. As a rule the pipe-line runs from a property closely approximate the production from that property over a period of months. Because of the accurate gauging of clean (net) oil when running to the pipe line, the department prefers, when practicable, to compute the royalty on the basis of the monthly pipe-line runs from a leasehold rather than on the basis of the actual monthly production, but it reserves the right to compute royalty on a production basis, taking storage into acccount, whenever the supervisor or his representative may so elect.

(*c*) The lessee shall file with the supervisor or his representative the run tickets for all oil run from leased lands except as special conditions may justify other arrangements approved by the supervisor.

## SECTION 4. NATURAL GAS AND GASOLINE ROYALTIES

### (*a*) MEASUREMENT OF NATURAL GAS

The term "natural gas" as used in these regulations shall be interpreted to mean either gas from gas wells or so-called "casing-head gas" or "trapped gas" produced by oil wells. The term "dry natural gas" applies to natural gas containing so little gasoline that its extraction is not commercially feasible or to natural gas from which gasoline has already been extracted.

All gas subject to royalty shall be measured by meters (preferably of the orifice-meter type), approved by the supervisor or his representative and installed at the expense of the lessee at such places as may be agreed to by the supervisor or his representative. The standard of pressure in all measurements of gas sold or subject to royalty shall be 10 ounces above an atmospheric pressure of 14.4 pounds to the square inch, regardless of the atmospheric pressure at the point of measurement, and the standard of temperature shall be 60° Fahrenheit. All measurements of gas shall be reduced by computation to these standards, no matter what may have been the pressure and temperature at which the gas was actually measured. By reason of higher altitudes in certain portions of the Rocky Mountain district the absolute pressure of the flowing gas in these fields shall be taken as the gauge pressure plus the actual average atmospheric pressure existing at the points of measurement, in order to reduce equitably the quantity of gas to the Government standard of 10 ounces above an atmospheric pressure of 14.4 pounds to the square inch. Tables for this correction have been computed for some of the fields situated at high altitudes. Information relative to these tables may be obtained through the supervisor or his representative.

### (*b*) PAYMENT OF ROYALTIES

Natural gas and natural-gas gasoline royalties that are payable in value shall be paid to the Register of the United States Land Office for the district in which the leased land is situated. Royalties shall be due and payable on or before the 15th of each calendar month for all natural gas and natural-gas gasoline produced during the preceding calendar month.

The royalties on natural gas and natural-gas gasoline from permits and leases under the act of February 25, 1920, the act of June 4, 1920, the act of

March 3, 1923, and special agreement by the United States, unless otherwise specified in the permit, lease, or special agreement, shall be computed as stated in the following paragraphs *c* and *d*.

### (*c*) Royalties on Natural Gas

The royalty on natural gas, whether gas from which the natural-gas gasoline has been extracted or otherwise, shall be 12½ per cent of the value of the gas as fixed by the Secretary of the Interior where the average production per day for the calendar month is less than 3,000,000 cubic feet, and 16⅔ per cent where the average daily production is 3,000,000 cubic feet or more.

In the sale of dry natural gas there is but one commodity involved, and on it the Government collects a royalty of 12½ per cent, or 16⅔ per cent, according to the average daily production. These royalties are due regardless of whether the gas is produced as dry gas or whether it is the dry residual gas from a plant after natural-gas gasoline has been extracted.

In general, where natural gas is delivered or sold for purposes of extracting gasoline, two separate commodities are involved—the natural-gas gasoline and the dry residual gas. If, however, the lessee receives a higher price for such natural gas as a single commodity than the combined value of the two commodities, the natural-gas gasoline and the dry residual gas, as fixed by the Secretary of the Interior, the Government royalty shall be computed on natural gas alone and at the higher price received therefor by the lessee.

### (*d*) Royalties on Natural-Gas Gasoline

A royalty of 16⅔ per cent shall be paid on the value as fixed by the Secretary of the Interior of one-third of all natural-gas gasoline extracted and sold from the natural gas produced on the leased land.

Natural-gas gasoline (also known as casing-head gasoline) is a manufactured product. The value of this product is contingent upon the value of the raw material and the cost of its manufacture. The Government does not wish to collect royalty on that part of the value which is derived from the cost of manufacturing inasmuch as the Government's equity is confined to the value of the raw material involved. In computing royalty on natural-gas gasoline the value of the raw gasoline in the natural gas as produced is assumed to be one-third the value of the marketable natural-gas gasoline extracted from such gas, the remaining two-thirds being allowed to the lessee for the cost of manufacture. Thus the Government collects 16⅔ per cent of one-third of the market value as its royalty share of the natural-gas gasoline produced (or in effect one-eighteenth of the market value).

If the lessee derives revenue on natural gas from two sources, from natural-gas gasoline and dry (residual) gas sold, the Government will normally collect a royalty on the two products. Therefore, if there is a market for the dry residual gas from the natural-gas gasoline plant, a royalty on this dry gas as stipulated under headings (*b*) and (*c*) of this section must be paid to the Government.

The present policy of the department is to allow the use of a reasonable amount of dry gas for plant operation, subject to the advice and direction of the supervisor or his representative. The department will attempt to arrive at an equitable basis of settlement in determining what constitutes "a reasonable amount." Moreover, the department will investigate plants where gas is being wasted.



#### Example of Method for Computing Natural-Gas Gasoline Royalties

Assume—

That the value of natural-gas gasoline is 18 cents a gallon.

That 3 gallons of gasoline is recovered from each 1,000 cubic feet of natural gas treated.

Then—

The Government takes its royalty on one-third of 3 gallons (per 1,000 cubic feet of gas), or 1 gallon, having a value of 18 cents.

The Government's royalty on gasoline in this case is ⅙ (=16⅔ per cent) × 1 (gallon) × 18 cents=3 cents (on each 1,000 cubic feet of natural gas treated).

### (*e*) Relief Measures

Adverse climatic and economic conditions in certain portions of the Rocky Mountain district result in unusually high operating and marketing costs. In order to encourage the most complete practicable utilization of natural gas under such conditions the Secretary of the Interior will, in his discretion and on proper showing of the necessity therefor, modify by specific order the method of computation of royalty on natural-gas gasoline set forth in subsection (*d*) hereof, to provide for a royalty of 16⅔ per cent of the value of not less than one-fifth of all natural-gas gasoline extracted and sold from the natural gas produced on the leased land, such modification to be effective in specific areas and for a definite period to be fixed by him in each order.

### (*f*) Royalty on Drip Gasoline

The royalty on all drip gasoline recovered and sold from gas produced on the leased lands shall be the same as that required for natural gas gasoline manufactured within the same district.

### (*g*) Determination of Gasoline Content

Tests to determine the gasoline content of natural gas delivered to plants manufacturing gasoline are required to check plant efficiency and to obtain an equitable basis for allocating the gasoline output of any plant to the several sources from which the natural gas treated is derived. The gasoline content of the natural gas delivered to each gasoline plant treating gas derived from leased lands shall be determined by methods approved by the supervisor and under his supervision on the basis of periodical field tests made at each meter.

### (*h*) Quantity Basis for Computing Gasoline Royalty

The primary quantity basis for computing monthly royalties on natural-gas gasoline is the monthly net output of the plant at which the gasoline is manufactured, "net output" being defined as the natural-gas gasoline that the plant is able to manufacture and sell, less a deduction of any portion thereof derived from naphtha or other blending materials.

(*a*) If the net output of a plant is derived from the natural gas obtained on only one leasehold the quantity of gasoline on which computations of royalty for the lease are based is the net output of the plant.

(*b*) If the net output of a plant is derived from natural gas obtained from several sources of gas of uniform gasoline content, the proportion of net output allocable to each lease as a basis for computing royalty will be determined

by dividing the amount of natural gas delivered to the plant from the leasehold by the total amount of natural gas delivered to the plant from all sources.

(*c*) If, however, the net output of a plant is derived from natural gas obtained from several sources of gas of diverse gasoline content, the proportion of net output allocable to each lease as a basis for computing royalty will be determined by multiplying the amount of natural gas delivered to the plant from the leasehold by the gasoline content of the gas and dividing the arithmetical product thus obtained by the sum of arithmetical products similarly obtained for all separate sources of natural gas treated at the plant.

## SECTION 5. REPORTS TO BE MADE BY LESSEE (INCLUDING PERMITTEE)

### Introduction

In operating, to know the property is to know the individual wells on it. For this reason much of the information requested by the Geological Survey concerns individual wells. Experience has shown that these data are essential to careful operation and are necessary for engineering studies that often enable the supervisor and his representatives to offer valuable advice on the handling of properties. Forms for making reports to the department, described in this section, can be obtained from the supervisor or his representatives, and such forms, unless others are specified by the supervisor, must be used by the lessee. Lessees must fill out all forms completely and file them punctually with the supervisor or his local representative. Failure of the lessee to submit the reports required herein constitutes noncompliance with the terms of these regulations and is cause for cancellation of the lease or permit.

### (*a*) Sundry Notices and Reports on Wells (Form 9–331a)

Form 9–331a covers all notices and all reports pertaining to individual wells except those for which special blanks are provided. This form may be used for any of the purposes listed, or a special heading may be inserted on the blank to adapt it for use for other similar purposes. Any written notice of intention to do work or of change in plans must be filed in triplicate unless otherwise directed and must reach the supervisor or his representative and receive his approval before commencement of the work. One copy of the form will be returned to the lessee if and when approved and will constitute his authority to begin work. The lessee is responsible for receipt of the notice by the supervisor or his representative in ample time for proper consideration and action. If in case of emergency any notice is given orally or by wire, and approval is obtained, the transaction shall be confirmed in writing as a matter of record. The examples following illustrate some of the uses to which Form 9–331a may be put.

#### Notice of intention to drill (Form 9–331a)

The notice of intention to drill a well must be filed in triplicate with the supervisor or his local representative and approval received before the work is commenced. This notice must give the location in feet from property lines and, if possible, the elevation of the derrick floor and the geologic name of the surface formation; also an estimate of the depth at which and the stratum or formation in which the oil or gas is expected and approximately the depths at which specified strings of casing will be set or landed; also the weight of



the sizes of casing proposed to be set or landed at these depths, and a statement as to whether any cementing, mudding, or other special work is contemplated.

#### Notice of intention to change plans (Form 9–331a)

Owing to unexpected conditions, it may become necessary to change the plans of proposed work in connection with either the drilling or the repair of wells. Complete details of these changes should be submitted in triplicate to the supervisor or his representative on this form and approval obtained before the work is undertaken.

#### Notice of date for casing and water shut-off test (Form 9–331a)

As the exclusion of water from oil or gas-bearing formations is one of the most important items of conservation, the supervisor or his local representative will witness as many casing and water shut-off tests as possible. Form 9–331a should be filled out and filed in triplicate with the supervsior or his local representative in advance of the approximate date on which the lessee expects to make the test. Later by agreement the exact day may be fixed.

#### Report on result of casing and water shut-off test (Form 9–331a)

If the supervisor or his representative authorizes but does not witness a casing or water shut-off test, the lessee shall submit in triplicate a statement signed by the employee in charge of the work giving details and results of the test. The information given must be complete and include such items as depth of shut-off; head of water found; depth and thickness of water strata penetrated before landing pipe; weight, nominal diameter, and depth of casing in the hole; fluid levels before and after test; length of time the well stood for each test; depth drilled out below shoe, if any; note of oil or gas showing; length and character of bridge, if used; method of shut-off; amount and name of cement and time given for set; and any other pertinent data.

#### Notice of intention to redrill or repair well (Form 9–351a)

If it seems desirable to make repairs in or to deepen a well, a detailed written statement of the plan of work shall be made in triplicate to the supervisor or his local representative and approval obtained before the work is started. In work that affects only rods, pumps, or tubing or other routine work, such as cleaning out, no notice of report will be necessary.

#### Notice of intention to shoot (Form 9–331a)

Before shooting any well (whether for increasing production or in drilling, repair, or abandonment) notice of intention to shoot shall be given in triplicate to the supervisor or his local representative and approval obtained before shooting is done. When the notice of intention to shoot becomes a part of a notice of intention to redrill, repair, or abandon a well, the supervisor or his representative may accept such notice in lieu of a separate notice of intention to shoot.

The notice of intention to shoot (Form 9–331a) must be accompanied by the complete log of the well to date, provided the complete log has not previously been filed, and must state the object of shooting, the size and kind of the proposed shot, the exact location and distribution of the explosive in the well (by depths), and the name of the company that is to do the shooting. The notice shall also contain an accurate statement of the daily oil and water production, if any, at the time the notice is filed or at the date of last production.

SUBSEQUENT RECORD OF SHOOTING (FORM 9–331A)

After shooting any well a subsequent record of shooting must be filed in triplicate with the supervisor or his local representative. This record shall be filed separately on Form 9–331a within 30 days after the shooting is done, except where such shooting record constitutes a part of the log (Form 9–330) or a part of a record of other subsequent work done (Form 9–331a) or a part of an abandonment record filed within that period.

The subsequent record of shooting shall include a statement of the size of the shot and the nature, exact location, and distribution of the explosive used in the well (by depths). The record shall contain also an accurate statement of the average daily production of oil and water for at least a 10-day period prior to the filing of the report. In addition, this report should include other pertinent information, such as depth of cleaning out, time spent in bailing and cleaning out, and possible injuries to the casing or the well.

RECORD OF PERFORATING CASING (FORM 9–331A)

Usually a statement covering the details of perforated casing in a well is made on the log form. When perforations are made after the log has been sent in a report of the work shall be made in triplicate (Form 9–331a) to the supervisor or his local representative. Prior notice need not be given for such work, except that if it is intended to perforate casing that has excluded water from the well a notice in triplicate of intention to perforate and approval of the supervisor or his local representative are necessary before the work is begun.

NOTICE OF INTENTION TO PULL, OR OTHERWISE ALTER CASING (FORM 9–331A)

If it is desired to pull a portion or all of a string of casing, or to rip, perforate, or otherwise alter casing that has excluded water from a well, a notice (Form 9–331a) of such work must be given in triplicate and the approval of the supervisor or his local representative obtained before the work is started. When it is desired only to add casing without deepening the well and without altering the water string already in the well, it will be sufficient to report the operations on a subsequent notice of work done.

NOTICE OF INTENTION TO ABANDON WELL (FORM 9–331A)

Before beginning abandonment work on any well (whether drilling well, oil or gas well, water well, or so-called dry hole) notice of intention to abandon shall be filed in triplicate on Form 9–331a with the supervisor or his local representative and approval obtained before the work is started.

The notice of intention to abandon must show the reason for abandonment and must be accompanied by a complete log, in duplicate, of the well to date, provided the complete log has not been filed previously, and must give a detailed statement of the proposed work, including such information as kind, location, and length of plugs (by depths) and plans for mudding, cementing, shooting, testing, and removing casing as well as any other pertinent information.

SUBSEQUENT REPORT OF ABANDONMENT (FORM 9–331A)

After abandoning or plugging a well a subsequent record of work done must be filed in triplicate with the supervisor or his local representative. This record shall be filed separately (on Form 9–331a) within 30 days after the



work is done except where such record constitutes a part of the log (Form 9–330) or record of other subsequent work done (Form 9–331a) and is filed within that period.

The subsequent report of abandonment shall give a detailed account of the manner in which the abandonment or plugging work was carried out, including the nature and quantities of materials used in plugging and the location and extent (by depths) of the plugs of different materials. Records of any tests or measurements made and the amount, size, and location (by depths) of casing left in the well, as well as a detailed statement of the volume of mud fluid used, the pressures attained in mudding, and the names and positions of employees who carried on the work. If the well was shot this report must include a complete statement of the shooting, giving the details as called for on page 12 of these regulations.

SUPPLEMENTARY WELL HISTORY (FORM 9–331A)

A report of all work done on any well since the filing of the log form (Form 9–330) or the last report covering work on the well shall be filed in triplicate with the supervisor or his local representative on Form 9–331a within 30 days after completion of the particular work, or before, if called for by the supervisor.

(*b*) LOG OF WELL (FORM 9–330)

The lessee shall furnish to the supervisor or his representative, upon his demand, a partial or complete log of any well and shall file in duplicate with the supervisor or his representative not later than 15 days after the completion of each well a complete and accurate log on Form 9–330.

The lessee shall require the drillers, whether company labor or contract labor, to record accurately the depth, character, fluid content, and fluid levels, where possible, of each formation as it is penetrated, together with all other pertinent information called for by this form. The practice of compiling well logs from memory, some times after the work has been completed, will not be permitted.

(*c*) LESSEE'S MONTHLY REPORT OF OPERATIONS (FORM 9–329)

A separate report for each lease or permit is to be made for each calendar month, beginning for a lease with the month in which lease is issued and for a permit with the month in which drilling operations are initiated, and filed in duplicate with the supervisor or his local representative on or before the 6th day of the succeeding month, unless an extension of time for the filing of such report is granted by the supervisor or his representative. The report on this form constitutes a general summary of the status of operations on the property and, whatever such status may be, the report must be submitted each month until the permit or lease is terminated.

In order that the supervisor or his representative may obtain from this form the desired information, it is particularly necessary that—

(1) The lease or permit be identified by insertion of the name of the local United States land office and the serial number in the space provided in the upper right corner;

(2) Each well be listed separately by number, its location be given by 40-acre subdivision (¼ of ¼ sec.), section number, township, and range;

(3) The actual number of days each well produced, whether oil or gas, be shown for the calendar month;

(4) The proper columns show the quantity of oil actually produced, the total amount of natural gas measured, and the total amount of gasoline recovered (total sales as distinguished from the total production here required should be shown in the footnote);

(5) In the "Remarks" column, the depth of wells being drilled, the reasons for every shut down, the date and result of gasoline tests, and any other noteworthy information on operations not specifically provided for in the form should be shown. Separate reports on this form may be submitted by the lessee for oil and natural gas and gasoline.

The only information called for in this report that may occasion inconvenience to the operator is the statement of the number of barrels of oil and water produced by each well. Usually a method of gauging individual wells can be devised that will check, with a reasonable degree of accuracy, the production of the entire leasehold. The supervisor or his representative will advise the operator as to methods of gauging on the leased lands.

The lessee must report with accuracy the status of all wells on the leased lands, as this information is essential in computing royalties. (See sec. 3, b.)

### (*d*) Daily Report of Gas-Producing Wells (Form 9–352)

Unless otherwise directed by the supervisor or his representative, the readings of all meters showing production of natural gas from leased lands shall be submitted daily on Form 9–352, together with the meter charts. After a check has been had the meter charts will be returned.

### (*e*) Lessee's Statement of Oil and Gas Runs and Royalties (Form 9–361)

When directed by the supervisor or his representative, a monthly report shall be made by the lessee in duplicate, on Form 9–361, showing each run of oil and all sales of gas and gasoline and the royalty accruing therefrom to the Government. When use of this form is required it must be completely filled out and sworn to.

### (*f*) Special Forms

Because of the special conditions in certain localities, special forms other than those shown in these regulations, such as run or sales statements, may be necessary. Instructions for the filing of such forms will be given by the supervisor or his representative.

## SECTION 6. APPEAL TO THE SECRETARY OF THE INTERIOR

The lessee must immediately obey all orders intended to carry out the terms and spirit of these regulations, whether issued directly by the supervisor or through his representative (see section 2) or sent to the lessee or his agent by ordinary mail, but any such order after being put into effect by the lessee shall be subject to review by the Secretary of the Interior upon appeal to him filed by the lessee with the supervisor or his representative within 30 days after the order has been served.

The administration of these regulations shall be under the direction of the Geological Survey.

GEO. OTIS SMITH,
*Director of Geological Survey.*

Approved.

E. C. FINNEY,
*First Assistant Secretary.*



# FORMS

Form 9–331a
(Feb., 1926)

U. S. Land Office _____
_____
Serial number _____
Lease or permit _____

DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY

*Sundry notices and reports on wells*

| | | | |
|---|---|---|---|
| Notice of intention to drill | | Record of perforating casing | |
| Notice of intention to change plans | | Notice of intention to pull or otherwise alter casing. | |
| Notice of date for test of water shut-off | | Notice of intention to abandon well | |
| Report on result of test of water shut-off | | Subsequent report of abandonment | |
| Notice of intention to re-drill or repair well | | Supplementary well history | |
| Notice of intention to shoot | | | |
| Subsequent record of shooting | | | |

(Indicate above by check mark nature of report, notice, or other data)

_____, 192

Following is a { notice of intention to do work / report of work done } on land under { permit / lease } described as follows:

_____ _____ _____
(State or Territory) (County or Subdivision) (Field)

Well No. _____ _____ _____ _____
(¼ sec. and sec. No.) (Township) (Range)

_____
(Meridian)

The well is located _____ feet { N / S } of _____ line and _____ feet { E / W } of _____ line of sec. _____.

The elevation of the derrick floor above sea level is _____ feet.

DETAILS OF PLAN OF WORK

[State names of and expected depths to objective sands; show sizes, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work]

_____
_____
_____
_____
_____

Approved _____ Company _____
(Date)

_____ By _____

Title _____ Title _____
(Geological Survey)

Address _____ Address _____

NOTE.—Reports on this form to be submitted in triplicate to the supervisor for approval.

Form 9–329
Revised March 10, 1926

U. S. Land Office_____
Serial Number_____
Lease or permit_____

DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

*Lessee's monthly report of operations*

State_____ County_____ Field_____

The following is a correct report of operations and production (including drilling and producing wells) for the month of_____, 192__

Agent's address_____ Company_____

Signed_____

Phone_____ Agent's title_____

| Section and ¼ of ¼ | Township | Range | Well No. | Days produced | Barrels of oil | Gravity | Cubic feet of gas (in thousands) | Gallons of gasoline recovered | Barrels of water (if none, so state) | Remarks (if drilling, depth; if shut down, cause; date and result of test for gasoline content of gas) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

NOTE.—There were_____runs or sales of oil; _____runs or sales of gas; _____runs or sales of gasoline during the month. (Write "no" where applicable.)

NOTE.—Report on this form is required for each calendar month, regardless of the status of operations, and must be filed in triplicate with the supervisor by the 6th of the succeeding month unless otherwise directed by the supervisor.

Form 9–330

U. S. Land Office_____
Serial number_____
Lease or permit_____

DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

*Log of oil or gas well*

Locate well correctly

Company_____ Address_____

Lessor or tract_____ Field_____ State_____

Well No____, section____, township____, range____, meridian____, county____

Location____feet{N./S.}of____ line and____ feet{E./W.}of____line of____elevation____ (Derrick floor relative to sea level)

The information given herewith is a complete and correct record of the well and all work done thereon so far as can be determined from all available records.

Signed_____

Title_____

Date_____

The summary on this page is for the condition of the well at above date.

Commenced drilling_____, 19__ Finished drilling_____, 19__



Form 9–330—Continued.

*Oil or gas sands or zones*

[Denote gas by G]

No. 1, from_____to_____ No. 4, from_____to_____

No. 2, from_____to_____ No. 5, from_____to_____

No. 3, from_____to_____ No. 6, from_____to_____

*Important water sands*

No. 1, from_____to_____ No. 3, from_____to_____

No. 2, from_____to_____ No. 4, from_____to_____

*Casing record*

| Size casing | Weight per foot | Threads per inch | Make | Amount | Kind of shoe | Cut and pulled from | Perforated | | Purpose |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | From— | To— | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

*Mudding and cementing record*

| Size casing | Where set | Number sacks of cement | Method used | Mud gravity | Amount of mud used |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

*Plugs and adapters*

Heaving plug—Material_____ Length_____ Depth set_____

Adapters—Material_____ Size_____

*Shooting record*

| Size | Shell used | Explosive used | Quantity | Date | Depth shot | Depth cleaned out |
|---|---|---|---|---|---|---|
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

*Tools used*

Rotary tools were used from __ ___ feet to ___ feet, and from ___ feet to ___ feet

Cable tools were used from____ ___ feet to ___ feet, and from ___ feet to ___ feet

*Dates*

_____, 19____ Put to producing _____, 19____

The production for the first 24 hours was ____ barrels of fluid, of which ____ per cent was oil, ____ per cent emulsion, ____ per cent water, and ____ per cent sediment. Gravity, °Bé. _____

If gas well, cubic feet per 24 hours _____ Gallons gasoline per 1,000 cubic feet of gas _____

Rock pressure, pounds per square inch _____

Form 9-330—Continued.

*Employees*

----------, Driller. ----------, Driller.
----------, Driller. ----------, Driller.

*Formation record*

| From— | To— | Total feet | Formation |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

HISTORY OF OIL OR GAS WELL

It is of the greatest importance to have a complete history of the well. Please state in detail the dates of redrilling, together with the reasons for the work and its results. If there were any changes made in the casing, state fully, and if any casing was "sidetracked" or left in the well, give size and location. If the well has been dynamited, give date, size, position, and number of shots. If plugs or bridges were put in to test for water, state kind of material used, position, and results of pumping or bailing.

Form 9-352

U. S. Land Office----------
Serial number ----------
Lease or permit----------

DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY

*Daily report of gas-producing wells*

Operating company ----------
--¼ sec.----, township----, range----. Well No. ----. Date----------
Orifice No. ----. Size----. Hourly coefficient----at 10 ounces above 14.4 pounds.
Specific gravity----. Gasoline per thousand----gallons. Date tested----------

| Time | Static pressure gauge | Inches water differential | Extension | | Temperature | Remarks |
|---|---|---|---|---|---|---|
| A. M. | | | | | | |
| 12 to 1 | | | | | | |
| 1 to 2 | | | | | | |
| 2 to 3 | | | | | | |
| 3 to 4 | | | | | | |
| 4 to 5 | | | | | | |
| 5 to 6 | | | | | | |
| 6 to 7 | | | | | | |
| 7 to 8 | | | | | | |
| 8 to 9 | | | | | | |
| 9 to 10 | | | | | | |
| 10 to 11 | | | | | | |
| 11 to 12 | | | | | | |
| P. M. | | | | | | |
| 12 to 1 | | | | | | |
| 1 to 2 | | | | | | |
| 2 to 3 | | | | | | |
| 3 to 4 | | | | | | |
| 4 to 5 | | | | | | |
| 5 to 6 | | | | | | |
| 6 to 7 | | | | | | |
| 7 to 8 | | | | | | |
| 8 to 9 | | | | | | |
| 9 to 10 | | | | | | |
| 10 to 11 | | | | | | |
| 11 to 12 | | | | | | |
| Total extension | | | | | | |

Total delivery for day----------thousand cubic feet.
Total gasoline for day----------gallons.



Form 9-361
(February, 1926)

U. S. Land Office ----------
Serial number ----------
Lease or permit ----------

DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY

*Lessee's monthly statement of oil and gas runs and royalty*

Lessee ---------- Month ----------, 192 .
Location ----------
Section. T. R. M.
Field ----------. County ----------. State ----------.

Following are the *only* runs and sales made this month. Omission of data means *none*.

| Oil | | | | | | Gas | | |
|---|---|---|---|---|---|---|---|---|
| Tank number | Date | Net barrels run | Gravity | Price per barrel | Value | Sales in 1,000 cubic feet | Price per 1,000 cubic feet | Value |
| | | | | | | | | |
| | | | | | | Total sales | Average price | Total value |
| | | | | | | Purchaser of above gas | | |
| | | | | | | Gasoline | | |
| | | | | | | Sales in gallons | Price per gallon | Value |
| | | | | | | | | |
| | | | | | | Total sales | Average price | Total value |
| | | | | | | Purchaser of above gasoline | | |
| | | Total barrels run | Average price | | Total value | Number of oil-producing wells affecting royalty computation | | |
| Name of pipe-line company | | | | | Method of paying oil royalty | | | |

**Form 9-361** —Continued

| GOVERNMENT ROYALTY | | | |
|---|---|---|---|
| Sales | Royalty factor | Royalty in units | Value of royalty |
| Oil (barrels) | ------- | (1) | ------- |
| Gas (1,000 cubic feet) | ------- | (1) | ------- |
| Gasoline (gallons) | ------- | (1) | ------- |
| Total value of royalty) | ------- | ------- | ------- |

ACKNOWLEDGMENT

I have read and examined the statements made hereon and find them true, accurate, and complete.

---

(Signature and title of officer authorized to sign for lessee)

---

(State) } *ss:*

---

(County)

Subscribed and sworn to before me this ------- day of ----------, 192

---

*Notary Public in and for the above county and State.*

My commission expires----------

1 Where applicable state "None."

This form to be properly prepared, sworn to, and filed with the supervisor on or before the 20th day of the succeeding month. Runs of oil, gas, or gasoline may be listed on any other convenient form and attached to this report.

23473

END OF
TITLE